1T-C2-511
&
1T-C2-520

Operation Manual

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1 DISCLAIMER

This product is intended for professional and/or home use. This product is not intended for use in a medical environment and does not have the required certifications for such use. Similarly, use aboard any aircraft or spacecraft while in flight or as an adjunct to any surface, airborne or marine navigation system or any offshore marine activity, including control of any watercraft, or any use similar to those specifically herein mentioned is prohibited. Use in the aforementioned circumstances would require additional testing and certification.

You have not become the owner of any software - you have merely purchased the right to use the software. You may make one copy of the software for your own use. Other copies will be deemed a breach of copyright.

No warranty is made either expressed or implied including but not limited to any implied warranties of merchantability or fitness for a particular purpose. In no event shall the supplier or manufacturer of this product be liable for errors found within, or be liable for any direct, indirect or consequential damages or loss in connection with the purchase or use of this hardware software or manual. The sole and exclusive liability to the supplier and manufacturer regardless of the form of action shall not exceed the replacement cost of the materials described herein.

By using this equipment you have indicated that you have agreed to the terms listed above. If you do not wish to agree or the above terms are contrary to your conditions of purchase you may return the equipment, unused, to your supplier. All trademarks and copyrights are acknowledged. E&OE.

1.1 Regulatory Agency Acceptance

European 'CE' Mark Statement

Emissions: BS EN 61000-6-3:2001 (Generic Immunity Standard for Residential, Commercial and Light Industrial)
Immunity: BS EN 61000-6-1:2001 (Generic Immunity Standard for Residential, Commercial and Light Industrial)

1.2 FCC Statement

Class A Device: This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide a reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the Instruction Manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Caution: This equipment is intended for use in the manner prescribed in the Instruction Manual. Any user changes or modifications not expressly approved by TV

One Multimedia Solutions could void the user's authority to operate the equipment. Connecting this equipment to external devices requires no specially shielded cabling for FCC compliance. The Instruction Manual shows or describes the proper connection of this equipment for operation that insures FCC compliance.

Direct all inquiries regarding FCC compliance to:

TV One Multimedia Solutions
1350 Jamike Drive
Erlanger, KY 41018
859.282.7303
859.282.8225 (Fax)

1.3 Manual Version Information

Version: 2.7
Release Date: May, 2009

1.4 Manual Copyright Notice

This Operation Manual is the intellectual property of TV One, ©2009. No portion of this manual may be copied or reproduced in any manner or by any means, including, but not limited to electronic and electro-mechanical, without the express written permission of TV One.

2 IMPORTANT SAFETY INSTRUCTION

To insure the best from this product, please read this manual carefully. Keep it in a safe place for future reference.

To reduce the risk of electric shock, do not remove the cover from the unit.
No user serviceable parts inside. Refer servicing to qualified personnel.

2.1 Power and connections

This unit is not disconnected from the AC power source as long as it is connected to the wall outlet via an adapter. The off state for this unit is called standby mode. In standby mode the unit is designed to consume a reduced quantity of power compared to normal operating modes.

When not using the unit for a long period of time, ensure that the AC power adapter is disconnected from the wall outlet.

The AC wall outlet should be installed near to the unit and be easily accessible.

Do not plug in or attempt to operate an obviously damaged unit.

2.2 Water and moisture

To reduce the risk of fire and personal injury, operation of this device outdoors and/or exposure to rain, water or excessive moisture is expressly prohibited.

The apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.

2.3 General care

Do not force switches or external connections.

When moving the unit, disconnect the serial port connections first then the power cable and finally the interconnecting cables to other devices.

Do not attempt to clean the unit with chemical solvents or aerosol cleaners, as this may damage the unit. Use a clean dry cloth.

2.4 Location

Installation of this unit should be in a cool dry place, away from sources of excessive heat, vibration, dust, moisture and cold.

2.5 Ventilation

Slots and openings in the sides of the unit are provided for ventilation. To ensure reliable operation, avoid obstruction of these openings and ensure the unit is installed in a well-ventilated area.

2.6 Intellectual property

Some IC chips in this product include confidential and/or trade secret property. Therefore you may not copy, modify, adapt, translate, distribute, reverse engineer, reverse assemble or decompile the contents thereof.

2 IMPORTANT: CONSIGNES DE SECURITE

Afin de tirer le meilleur de ce produit, merci de lire attentivement ce manuel. Gardez-le dans un endroit sûr pour pouvoir le consulter à nouveau.

Afin de réduire le risque de choc électrique, ne retirez pas l'unité de sa protection.

Aucune pièce réparable par l'utilisateur à l'intérieur. Référez-vous à des personnes qualifiées.

2.1 Alimentation électrique et connexions

Cette unité n'est pas déconnectée de la source de courant électrique tant qu'elle est connectée à la prise murale. Le mode éteint de cette unité est appelé mode de veille. En mode de veille, cette unité est conçue pour consommer une quantité réduite de courant par rapport aux modes normaux d'utilisation.

Lorsque vous n'utilisez pas l'unité pendant une longue période, assurez-vous que le câble d'alimentation électrique est déconnecté de la prise murale.

La prise murale de courant doit être installée près de l'unité et aisément accessible.

Ne branchez pas et n'essayez pas d'utiliser une unité visiblement endommagée.

2.2 Eau et humidité

Pour réduire les risques d'incendie et de dommages corporels, l'utilisation de cet appareil à l'extérieur et/ou son exposition à la pluie, l'eau ou une humidité excessive est expressément interdite.

L'appareil ne doit pas être exposé aux gouttes ou aux éclaboussures et aucun objet contenant de l'eau, comme par exemple un vase, ne doit être posé sur l'appareil.

2.3 Entretien général

Ne forcez pas les boutons ou connexions externes.

Lorsque vous déplacez l'unité, déconnectez d'abord les connexions de ports en série puis le câble d'alimentation et enfin les câbles de connexion avec d'autres appareils.
N'essayez pas de nettoyer l'unité avec des dissolvants chimiques ou des produits nettoyants en aérosol, car cela peut endommager l'unité. Utilisez un chiffon propre et sec.

2.4 Emplacement

L'installation de cette unité doit se faire dans un endroit frais et sec, éloigné de sources excessives de chaleur, de vibrations, de poussière, d'humidité et de froid.

2.5 Aération

Les rainures et les ouvertures sur les cotés de l'unité servent à l'aérer. Pour permettre une utilisation sûre, évitez d'obstruer ces ouvertures et assurez-vous que l'unité est installée dans un endroit bien aéré.

2.6 Propriété intellectuelle

Certaines puces IC dans ce produit contiennent des éléments propriétaires confidentiels et/ou des secrets commerciaux. Vous ne devez donc pas copier, modifier, adapter, traduire, distribuer, démonter, désassembler, ou décomposer leur contenu.

2 INSTRUCCIONES IMPORTANTES DE SEGURIDAD

Para sacar el mejor provecho de este producto, léase este manual con detenimiento. Guárdelo en un lugar seguro para poder hacerle referencia en el futuro.

Para reducir el riesgo de calambre, no quite la cubierta del aparato.

No hay piezas utilizables dentro. Remítase todo mantenimiento a personal cualificado.

2.1 Corriente y conexiones

Mientras esté conectada a una toma de electricidad, el aparato seguirá conectado a la fuente de corriente CA. A la posición de «off» de este aparato se le denomina posición de espera. En la posición de espera, el aparato está diseñado a consumir una cantidad reducida de electricidad en comparación con los modos de operación normales.

Asegúrese de desconectar el cable de corriente CA de la toma de la pared cuando no va a utilizar el aparato por un periodo largo de tiempo.

La toma CA de la pared ha de estar instalada cerca del aparato y debe ser fácilmente accesible.

No enchufe ni intente operar un aparato que esté evidentemente dañado.

2.2 Agua y humedad

Para reducir el riesgo de fuego o de daños personales, se prohíbe la utilización de este aparato en el exterior y/o su exposición a la lluvia, al agua o a atmósferas de excesiva humedad.

El aparato no debe situarse cerca de zonas en las que haya riesgo de goteo o salpicaduras. Tampoco deben colocarse objetos que contengan agua (jarrones, por ejemplo) en el mismo.

2.3 Cuidado general

No forzar interruptores o conexiones externas.

Al mover el aparato, desconecte las conexiones del puerto en serie primero, luego el cable de electricidad y finalmente los cables interconectados a otros aparatos.
No intente limpiar el aparato con disolventes químicos o productos de limpieza aerosol, ya que podrían dañar el aparato. Utiliza un paño limpio y seco.

2.4 Ubicación

Este aparato se debe instalar en un lugar seco y fresco, lejos de fuentes de calor excesivas, la vibración, el polvo, la humedad y el frío.

2.5 Ventilación

El aparato viene provisto de ranuras y agujeros en los lados para la ventilación.

Para asegurar una operación eficaz, se debe evitar la obstrucción de estos agujeros y también asegurar que el aparato se instale en una zona con adecuada ventilación.

2.6 Propiedad intelectual

Algunos chips con circuito integrado de este producto incluyen propiedad confidencial y/o propiedad de secreto comercial. Por lo tanto queda prohibido copiar, modificar, adaptar, traducir, distribuir, usar técnicas retroactivas, desmontar, o recopilar los contenidos del mismo.

2 WICHTIGE SICHERHEITSVORSCHRIFTEN

Lesen Sie diese Bedienungsanleitung bitte sorgfältig, um Ihr Produkt optimal nützen zu können, und bewahren Sie sie zum späteren Nachschlagen an einem sicheren Ort auf.

Entfernen Sie bitte keinesfalls die Abdeckung, um der Gefahr eines Stromschlags vorzubeugen.

Im Inneren des Geräts befinden sich keine Teile, die vom Benutzer gewartet werden können. Lassen Sie Wartungsarbeiten nur von Fachpersonal durchführen.

2.1 Stromversorgung und anschlüsse

Solange das Gerät mit einer Steckdose verbunden ist, bleibt die Stromversorgung aufrecht. Der Ausschaltzustand des Geräts wird als Standbymodus bezeichnet. Im Standbymodus verbraucht das Gerät weniger Strom als in den üblichen Betriebsarten.

Wird das Gerät über einen längeren Zeitraum hinweg nicht verwendet, ziehen Sie bitte das Stromkabel aus der Steckdose.

Die Steckdose sollte sich in der Nähe des Geräts befinden und leicht zugänglich sein.

Verbinden Sie ein offensichtlich beschädigtes Gerät keinesfalls mit einer Steckdose und versuchen Sie auch nicht, es zu bedienen.

2.2 Wasser und feuchtigkeit

Um die Gefahr eines Brandes oder einer Körperverletzung zu verringern, ist es ausdrücklich verboten, dieses Gerät im Freien in Betrieb zu nehmen und/oder es Regen, Wasser oder hoher Feuchtigkeit auszusetzen.

Das Gerät darf keinen Tropfen oder Spritzern ausgesetzt werden und es dürfen keine mit Flüssigkeiten gefüllte Behälter, wie Vasen, auf das Gerät gestellt werden.

2.3 Allgemeine pflege

Wenden Sie bei der Handhabung von Schaltern und Anschlüssen keine Gewalt an.

Beim Umstellen des Geräts entfernen Sie zuerst die seriellen Anschlüsse, dann das Stromkabel und zum Schluss die Verbindungskabel zu anderen Geräten.

Versuchen Sie keinesfalls, das Gerät mit chemischen Lösungsmitteln oder Sprayreinigern zu reinigen, da dies das Gerät beschädigen könnte. Verwenden Sie ein sauberes, trockenes Tuch.

2.3 Aufstellung

Das Gerät sollte an einem kühlen, trockenen Ort aufgestellt werden, fern von übermäßiger Wärme, Vibrationen, Staub, Feuchtigkeit und Kälte.

2.5 Belüftung

Seitliche Schlitze und Öffnungen sorgen für die Belüftung des Geräts. Um die ordnungsgemäße Belüftung zu gewährleisten, dürfen diese Öffnungen nicht verdeckt werden. Sorgen Sie außerdem dafür, dass das Gerät an einem gut belüfteten Ort aufgestellt wird.

2.6 Gewerbliches eigentum

Einige integrierte Schaltkreise in diesem Produkt enthalten vertrauliche

Informationen und/oder Betriebsgeheimnisse. Sie dürfen daher diese Inhalte nicht kopieren, modifizieren, adaptieren, übersetzen, verteilen, rückentwickeln, rückassemblieren oder dekompilieren.

2 BELANGRIJKE VEILIGHEIDSINSTRUCTIES

Lees deze handleiding zorgvuldig door om het beste uit uw product te halen. Bewaar het op een veilige plek voor raadpleging in de toekomst.

Haal nooit het omhulsel van de eenheid af, dit om de kans op een elektrische schok te verminderen. Maak het apparaat nooit open: er bevinden zich geen door de gebruiker in te stellen onderdelen in het apparaat. Laat service en onderhoud over aan een gekwalificeerde technicus.

2.1 Elektriciteit en aansluiting

Deze eenheid is niet van de wisselstroom voedingsbron gescheiden wanneer de stekker nog in het stopcontact zit. Wanneer de eenheid uitstaat, staat deze nog in de stand-by modus. In de stand-by modus vergt de eenheid minder stroom dan in de normale "aan" modus.

Wanneer u de eenheid voor langere tijd niet gebruikt, zorg er dan voor dat de stekker van het wisselstroomsnoer uit het stopcontact is getrokken.

Het wisselstroom stopcontact moet dichtbij de eenheid geïnstalleerd worden en makkelijk toegankelijk zijn.

Als de eenheid duidelijk beschadigd is moet u deze nooit op het lichtnet aansluiten of bedienen.

2.2 Water en vocht

Om het risiko op brand en persoonlijk letsel te beperken is het gebruik van dit apparaat buiten en/of blootstelling aan regen, water of overdadige hoeveelheden vocht uitdrukkelijk verboden.

Het apparaat mag niet worden blootgesteld aan druppels of bespatting en er mogen geen objecten die gevuld zijn met vloeistoffen, zoals vazen, op het apparaat geplaatst worden.

2.3 Algemeen onderhoud

Forceer schakelaars of externe aansluitingen nooit.

Bij verplaatsing van de eenheid, de seriële poortaansluitingen eerst loskoppelen, dan de voedingskabel en als laatste de snoeren naar andere apparaten.
Probeer de eenheid nooit met chemische oplosmiddelen of schoonmaakmiddelen in een spuitbus schoon te maken, omdat dit de eenheid kan beschadigen. Gebruik een schone droge doek.

2.4 Plaatsing

Deze eenheid moet geïnstalleerd worden op een koele droge plaats, uit de buurt van bronnen van extreme hitte, vibraties, stof, vocht en kou.

2.5 Ventilatie

De sleuven en openingen aan de zijkant van de eenheid zijn voor ventilatie. Zorg er voor dat de eenheid op een goed geventileerde plek geïnstalleerd wordt zodat deze betrouwbaar werkt.

2.6 Intellectueel eigendom

Sommige IC chips in dit product bevatten vertrouwelijke informatie en/of fabrieksgeheimen. U mag daarom de inhoud hiervan niet kopiëren, wijzigen, aanpassen, vertalen, verspreiden, nabouwen, of decompileren

3 DEVICE SUMMARY

3.1 Device Capabilities

The 1T-C2-511 and 1T-C2-520 are compact (half-rack) standard and high definition video format converters capable of converting resolutions from 525i to 1080p without scaling.

The 1T-C2-511 is a SD/HD-SDI to DVI-I format converter and Audio De-Embedder capable of converting from standard and high definition serial digital video simultaneously to DVI digital and analog. Audio can be extracted from any stereo pair selected from any of 8 embedded within the SDI. The extracted stereo audio signal is then output as a single AES-3id output and a stereo analog audio pair. The input SDI signal is equalized and provided as a re-clocked output.

The 1T-C2-520 is a DVI-I and YUV to SD/HD-SDI format converter capable of converting analog and digital DVI signals to standard and high definition serial digital video signals. Input analog formats include RGBHV, RGBS, RGsB, YUV and YPbPr.

These two units have been designed to a high standard with ease of use and reliability in mind, utilizing intuitive simple to use controls and interfaces, as well as rugged metal cases for robustness in tough environments. Up to two units can also be rack mounted using the optional RM-220 single/dual rack-mount kit.

3.2 Device Features

Simple control
In many instances both units need no set up or control, but can be used straight from the box. However, both are provided with buttons and LEDs on the front panel and an on-screen display (OSD) to allow control of the unit and show status.

Upgradeability
Both units benefit from firmware upgradeability, thus reducing product obsolescence by allowing the installation of the latest version of firmware. This only applies to the software used to control the unit, and not its actual functionality. See http://www.tvone.com/support for more detail.

4 PRODUCT IMAGES

Your unit should look like one of the images below.

1T-C2-511

1T-C2-520

5 1T-C2-511

The 1T-C2-511 is an HD/SD-SDI to DVI-I format converter with reclocked SDI loop thru and audio extraction. Video processing is achieved using proprietary video processing.

Audio de-embedding may alter control and user data within the AES output, but will not normally change the video or audio signals.

SD-SDI inputs will be line doubled to be compatible with the DVI standard.

5.1 Video/Audio inputs and outputs

Visible in the images, the units have:

- 1 SD/HD-SDI input
- 1 SD/HD-SDI re-clocked output
- 1 DVI-I output
- 1 AES-3id output
- 1 Stereo audio output on two RCA jack sockets

Input formats:

- SD-SDI SMPTE 259M-C (270Mbps) with or without embedded audio
- HD-SDI SMPTE 292M (1.485/1.4835Gbps) with or without embedded audio

Output formats:

- SDI Loop thru matches the input format.
- DVI-I
- RGBHV, RGBS, RGsB, YUV, YPbPr
- AES-3id on BNC
- Stereo audio on 2 off RCA

Input-output conversion table:

Input Signal	Video Output Signal	
525-line SD-SDI @ 29.97Hz	Analog	525-line progressive RGBHV @ 29.97
	Digital	525-line progressive DVI-D @ 29.97Hz
625-line SD-SDI @ 25Hz	Analog	625-line progressive RGBHV @ 25Hz
	Digital	625-line progressive DVI-D @ 25Hz
720p HD-SDI @ 23.98, 24 Hz, 25Hz, 29.97Hz, 30Hz, 50Hz, 59.94Hz, 60Hz	Analog	720-line progressive RGBHV @ same frame rate as input
	Digital	720-line progressive DVI-D @ same frame rate as input
1080p HD-SDI @ 23.98Hz, 24Hz, 25Hz, 29.97Hz, 30Hz	Analog	1080-line progressive RGBHV @ same frame rate as input
	Digital	1080-line progressive DVI-D @ same frame rate as input
1035i HD-SDI @ 29.97 Hz, 30Hz	Analog	1035-line interlaced RGBHV @ same frame rate as input
	Digital	1035-line interlaced DVI-D @ same frame rate as input
1080i HD-SDI @ 25Hz, 29.97Hz, 30Hz	Analog	1080-line interlaced RGBHV @ same frame rate as input
	Digital	1080-line interlaced DVI-D @ same frame rate as input

6 1T-C2-520

This is a DVI-I to HD/SD-SDI format converter without scaling.

6.1 Video inputs and outputs

Visible in the images, the units have:

- 1 YPbPr input on 3 BNC connectors
- 1 DVI-I input
- 1 SD/HD-SDI output

Input formats:

- DVI
- RGBHV, RGBS, RGsB, YUV, YPbPr on DVI-I connector.

Output formats:

- SD-SDI SMPTE 259M-C (270Mbps)
- HD-SDI SMPTE 292M (1.485/1.4835Gbps)

Input-output conversion table:

Input Signal	Video Output Signal	
525-line SD-SDI @ 29.97Hz	Analog	525-line progressive RGBHV @ 29.97
	Digital	525-line progressive DVI-D @ 29.97Hz
625-line SD-SDI @ 25Hz	Analog	625-line progressive RGBHV @ 25Hz
	Digital	625-line progressive DVI-D @ 25Hz
720p HD-SDI @ 23.98, 24 Hz, 25Hz, 29.97Hz, 30Hz, 50Hz, 59.94Hz, 60Hz	Analog	720-line progressive RGBHV @ same frame rate as input
	Digital	720-line progressive DVI-D @ same frame rate as input
1080p HD-SDI @ 23.98Hz, 24Hz, 25Hz, 29.97Hz, 30Hz	Analog	1080-line progressive RGBHV @ same frame rate as input

	Digital	1080-line progressive DVI-D @ same frame rate as input
1035i HD-SDI @ 29.97 Hz, 30Hz	Analog	1035-line interlaced RGBHV @ same frame rate as input
	Digital	1035-line interlaced DVI-D @ same frame rate as input
1080i HD-SDI @ 25Hz, 29.97Hz, 30Hz	Analog	1080-line interlaced RGBHV @ same frame rate as input
	Digital	1080-line interlaced DVI-D @ same frame rate as input

7 FRONT PANEL CONTROLS

7.1 Button controls

The following buttons are available on the front of the unit include all or some of the following:

Button	Button Function
Menu	Activates the on screen display and allows for menu control
↓	This displays the previous menu item
↑	This displays the next menu item
Input	Input select (1T-C2-520 only). Press to cycle thru the input sources.
Standby	Hold in to put the unit into Standby (power-save) mode. Hold in briefly to come out of Standby mode.

7.2 Default settings

When your unit powers up for the first time, the LED next to the Menu button will illuminate showing that the unit is operational. If there is no valid input, the 1T-C2-5111 will output the OSD in 720p, and on 1T-C2-520 will output the OSD in 525i resolution. If there is a valid input then the output signal will be present on all outputs simultaneously. In the same way if the SDI video input has audio present on channels 1 and 2, then these will be output on both AES and analog stereo outputs, else they will be muted.

7.3 Control

The on-screen display (OSD) is controlled from the front panel using the MENU, ↓ and ↑ buttons on the front panel. Pressing the MENU button once will activate the OSD. Holding the MENU button in for a short while will then close the OSD.

While the OSD is active, use the ↓ and ↑ arrowed keys to change where you are in the menu.

You can edit values in square brackets '[ ]' by pressing the MENU button once (you will note that the brackets surrounding a particular parameter's value will begin to flash). Change the value by using the ↓ and ↑ buttons to decrease and increase the value respectively. Then finalize your adjustment by pressing the MENU button once more.

A few menu items have multiple parameters within an individual menu selection. In those cases, you can adjust one item, and then move to the next etc.

Holding the MENU button in for a few seconds stores all changes in memory. Unless you intentionally change it again later, the adjustment will remain even after power is removed from the unit.

On the 1T-C2-520 repeatedly pressing the INPUT button cycles through the three possible inputs, DVI-D, DVI-A and YPbPr. If the selected input has no connection or the resolution is not one of those supported by the unit, then the error LED will illuminate and the output resolution will revert to 525i with the OSD permanently on.

7.4 The Menu Structure

Menus are arranged so that a particular general function has a menu name on the top line and beneath that either a sub-menu or one or more related individual settings are displayed.

In some cases the functionality is global – meaning it has an effect on the unit as a whole (such as changing the output format). In the majority of cases, the function is related to a specific operational area of the unit, detailed by the text in the top line.

There are two screens that appear before the Group Menus (sub-menus) are accessed.

```
TV One
CORIO2 1T-C2-5xx
```

The first is the 'welcome' display shown above indicating the model of the unit.

```
www.tvone.com
SW: 154. PT: 70, BT: 65
```

Moving to the next menu item displays the firmware information screen (the numbers on your unit will be different to those shown). The SW number refers to the version of firmware loaded into the unit, this can be upgraded from the support website.

The PT and BT numbers refer to Hardware version information and are of interest to the Technical Support Group should you ever need assistance.

```
1280x720 60Hz
Source                    [SDI1]
```

The source display screen allows the input source for the currently selected window to be changed. The top line of the display shows the detected characteristics of the signal. Valid input sources match those available on the front of the unit.

```
CORIO2 1T-C2-511
Audio L&R extract         [   1&2]
```

This menu item allows you to select different pairs of audio channels from the SDI signal and route them to both the AES-3id and the stereo analog outputs. The odd channels will be routed to the left output, whilst the even channel will be routed to the right output.

```
CORIO2 1T-C2-511
Output type                [RGBHV]
```

This menu item allows you to select the type of signal output your unit will provide. Types of output vary depending on the resolution selected and include various types of component signals YUV with tri level sync. (tlYUV) and RGB signals RGBHV, RGBS, RGsB (sync on green).

```
CORIO2 1T-C2-5xx
H/V shift          [   0] [   0]
```

This positions the selected Window horizontally and vertically on the monitor. This should only be used for 'fine tuning' and should not normally require adjustment.

```
CORIO2 1T-C2-5xx
Push to store
```

This screen provides a quick and easy way to store all current operating parameters. The unit will remember the set up you are currently using at the time of data storage and also when you next apply power. To store the current settings, press and release the menu button.

```
CORIO2 1T-C2-5xx
OSD on power up            [On]
```

This parameter controls whether the 'welcome' screen is displayed or not on power up – it can be disabled as required. This is useful when a unit is installed as part of an overall system.

```
CORIO2 1T-C2-5xx
RS232 baud rate            [57600]
```

This menu item allows the adjustment of the serial baud rate used for RS-232 communications. The rate can be adjusted to 9600, 19200, 28800, 33600, 38800, 57600 and 115200. (This adjustment is provided for those instances where you wish to use the RS-232 control system for your own purposes.) The default baud rate is 57600.

```
CORIO2 1T-C2-5xx
Power cycles                   4
```

Power Cycles refers to how many times the unit has been powered since it left the factory. This is an informational screen. No action is taken regardless of the value shown here, however some users have an equipment cleaning or specification audit procedure and this information may be useful to those users.

CORIO2 1T-C2-5xx	
Firmware updates	1

Indicates the total number of times the firmware has been changed over the life of the unit. It is quite possible for this to be more than 1, as a unit undergoes numerous tests during production.

CORIO2 1T-C2-5xx	
Hours in Use	4

This is another informational display for usage audit purposes.

8 TROUBLESHOOTING AND TECHNICAL SUPPORT

If problems are experienced, please read through the symptom topics below in order to resolve the problem. After doing so, if you still need to, contact Technical Support at ***http://www.tvone.com/support***. Please have the following details of the problem handy:

Whether the problem happens only at specific times or has only just started occurring (and what other things have changed at the same time).

Firmware revision numbers - found in the first item of the System menu.

If the problem relates to a specific source.

8.1 Your unit does not power up

When powered, you should see one or more LED's illuminated on the front panel. If this is not the case, check that the power supply is plugged in and is the correct voltage and polarity.

8.2 There is no picture on the output of your unit.

If no LEDs are on, then ensure that the AC power adaptor is connected properly and the power switch is on at the AC outlet.

Check that video is being input to the unit by connecting your video source directly to the receiving equipment.

Check that the display video equipment is set to the correct line input and format/standard as appropriate.

Check that the device connected to the output is on and can support the resolution of the input device.

8.3 There is no audio on the output of your 1T-C2-511.

If no LEDs are on, then ensure that the AC power adaptor is connected properly and the power switch is on at the AC outlet.

Check that there is audio embedded in the SDI source, and that you have selected audio channels with audio present.

8.4 The controls are not responding.

Check that the unit is powered and that the LEDs are illuminated.

8.5 The ERROR LED remains illuminated on the 1T-C2-520.

Check that video is being input to the unit by connecting your video source directly to the receiving equipment.

Check that the display video equipment is set to the correct line input and format/standard as appropriate.

Check that the device connected to the output is on and can support the resolution of the input device by comparing it with the resolutions in the specifications at the end of this manual.

8.6 The picture on the video display is green.

The Output type is probably incorrectly set to YUV mode, whereas you are connected to an RGB monitor – see Adjust outputs menu.

8.7 The output image is distorted.

This may occur where some of the areas of the image are dark and others are very bright. The solution is to adjust the contrast and brightness settings on your Output device to rectify the problem.

8.8 Changing the input resolution causes the output video to be unstable.

This may occur when changing between two similar resolutions (such as 720p 59.94Hz and 720p 60Hz). Because the unit is able to compensate for poor input resolutions changing between similar resolutions may be seen by the unit as the input frequency 'drifting.' In order to lock to the new resolution a power cycle or re-connecting the input may be necessary.

8.9 There is no output from the 1T-C2-511.

Check that the input resolution is supported by the unit. The unit is designed to conform to SDI specifications, for a full list of available resolutions look at the 1T-C2-511 Input-output conversion table.

9 RETURN PROCEDURE

Before returning your unit for repair, there are several checks you can make yourself to make sure the problem is actually caused by a failure.

9.1 Are you sure there's a fault?

Many 'faults' are due to incorrect set-up or use so a simple checklist is provided below to help you identify potential problems.

Set the unit up with your equipment as described in this manual and run through the checklist. This will hopefully determine whether or not the unit is actually faulty and prevent units from being returned unnecessarily.

Check the Troubleshooting tips of this manual and check out the various FAQ (Frequently Asked Questions) listings on the support website, ***http://www.tvone.com/support***, which shows the latest Hints, Tips and Solutions.

Don’t presume it is the unit that is causing the problem. Check that the equipment being used with it is fully working and setup correctly – bypass the unit if possible by connecting the video source directly to the video display.

Check the AC power. Is it present and is the unit turned on? Check that all cables are properly plugged in and are not damaged and then make certain that all equipment connected to the unit is working properly.

Perhaps you have a “frozen” unit and you cannot change an input nor exit from the current task. In that case, a simple 'Factory Reset' of the product may sort the problem out. See earlier section on Front panel buttons to do this. Note that all user-settings will be lost following an engineering reset.

It is also worth ensuring that the latest firmware is installed in the unit – although, again, user settings are lost during a firmware update.

9.2 To return a unit for repair

First contact TV One using the ***http://www.tvone.com/support*** website. Support personnel will determine whether a return to the factory is the appropriate solution. If that’s the case, a Return Authorization Number will be issued. You should provide the following information for each unit:

Product type
Serial number of the faulty unit (this is on the underside of the unit)
Full details of fault
Invoice number (if available)
Units should be returned via insured carrier or registered mail (thus allowing a trace to be made if the Processor is lost in transit), with shipping costs and insurance arranged at your own risk and expense. Goods in transit are the responsibility of the sender and the supplier will not be responsible for transit losses.

Please clearly state the return number on the outside packaging and on any accompanying documentation. This will greatly speed up processing.

IMPORTANT: DO NOT return a unit for warranty repair without first obtaining a Return Authorization Number. No action will be taken on a unit returned in warranty for repair without a Return Authorization Number.

10 WARRANTY POLICY

LIMITED WARRANTY – With the exceptions noted in the next paragraph, TV One warrants the original purchaser that the equipment it manufactures or sells will be free from defects in materials and workmanship for a period of two years from the date of purchase. Should this product, in TV One's opinion, prove defective within this warranty period, TV One, at its option, will repair or replace this product without charge. Any defective parts replaced become the property of TV One. This warranty does not apply to those products which have been damaged due to accident, unauthorized alterations, improper repair, modifications, inadequate maintenance and care, or use in any manner for which the product was not originally intended.

Items integrated into TV One products that are made by other manufacturers, notably computer hard drives and liquid crystal display panels, are limited to the term of the warranty offered by the respective manufacturers. Such specific warranties are available upon request to TV One.

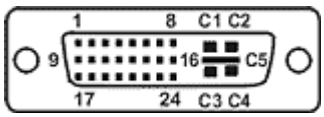
If repairs are necessary under this warranty policy, the original purchaser must obtain a Return Authorization Number from TV One and return the product to a location designated by TV One, freight prepaid. After repairs are complete, the product will be returned, freight prepaid.

LIMITATIONS - All products sold are "as is" and the above Limited Warranty is in lieu of all other warranties for this product, expressed or implied, and is strictly limited to two years from the date of purchase. TV One assumes no liability to distributors, resellers or end-users or any third parties for any loss of use, revenue or profit.

TV One makes no other representation of warranty as to fitness for the purpose or merchantability or otherwise in respect of any of the products sold. The liability of TV One with respect to any defective products will be limited to the repair or replacement of such products. In no event shall TV One be responsible or liable for any damage arising from the use of such defective products whether such damages be direct, indirect, consequential or otherwise, and whether such damages are incurred by the reseller, end-user or any third party.

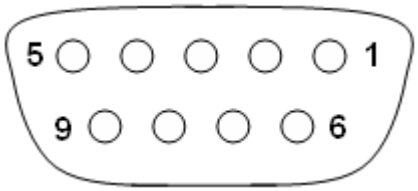
11 CONNECTOR PINOUTS

11.1 DVI-I connector



PIN#	SIGNAL	PIN#	SIGNAL
1	T.M.D.S DATA 2-	16	HOT PLUG DETECT
2	T.M.D.S DATA 2+	17	T.M.D.S DATA 0-
3	T.M.D.S DATA 2/4 SHIELD	18	T.M.D.S DATA 0+
4	T.M.D.S DATA 4-	19	T.M.D.S DATA 0/5 SHIELD
5	T.M.D.S DATA 4+	20	T.M.D.S DATA 5-
6	DDC CLOCK [SCL]	21	T.M.D.S DATA 5+
7	DDC DATA [SDA]	22	T.M.D.S CLOCK SHIELD
8	Analog Vertical Sync	23	T.M.D.S CLOCK+
9	T.M.D.S DATA 1-	24	T.M.D.S CLOCK-
10	T.M.D.S DATA 1+		
11	T.M.D.S DATA 1/3 SHIELD	C1	Analog Red
12	T.M.D.S DATA 3-	C2	Analog Green
13	T.M.D.S DATA 3+	C3	Analog Blue
14	+5V POWER	C4	Analog Horizontal Sync
15	GND (return for +5V, HSync and VSync)	C5	Analog Ground (analog R, G and B return)

11.2 RS232 / D9 socket



1. N/C
2. TX (Transmit data)
3. RX (Receive data)
4. N/C
5. GND (Signal return)
6. N/C
7. CTS (Clear to send)
8. RTS (Request to send)
9. N/C

12 SPECIFICATIONS

See product front and rear diagrams for details of product I/O.

12.1 1T-C2-511 SD/HD-SDI to DVI-I Converter and Audio De-Embedder

Video input		
SD-SDI:		SMPTE 259M-C 270Mbps
HD-SDI:		SMPTE 292M 1.485/1.4835Gbps
Video output		
SD/HD-SDI:		Equalized and re-clocked.
DVI-D:		3+1 TMDS Channels,
DVI-A	HV sync:	TTL Level, 56ohm output termination (TTL)
	RGB Level Range:	0.5-2.0 V p-p approx.
	Formats:	Analog RGB/YPbPr supporting RGBHV, RGBS, RGsB & YPbPr
Resolutions:		525-line @ 29.97 625-line @25Hz 720p @ 23.98Hz, 24Hz, 25Hz, 29.97Hz 30Hz, 50Hz, 59.94Hz, 60Hz 1080p @ 23.98Hz, 24Hz, 25Hz, 29.97Hz 30Hz 1035i @ 29.97Hz 30Hz 1080i @ 25Hz, 29.97Hz 30Hz

Audio Input	
Selectable in pairs from any 16 embedded channels	
Supported Quantization:	24 or 20bit
Supported Sampling:	48 kHz
Stereo Analog output	
Bandwidth:	< 50 Hz to > 20 kHz
THD+N	-72 dB @1 kHz
Crosstalk	< -72 dB @1kHz
AES-3id Output	
Level:	1 Vpp
Supported Quantization:	24 or 20bit
Supported Sampling:	48 kHz
Impedance:	75 Ω
THD+N	-115 dB

12.2 1T-C2-520 DVI-I to SD/HD-SDI Converter

Video input		
YPbPr:		Analog YPbPr
DVI-D:		3+1 TMDS Channels,
DVI-A:	HV sync:	TTL Level, 10 kΩ input termination (TTL)
	RGB Level Range:	0.5-2.0 V p-p approx.
	Formats:	Analog RGB supporting RGBHV, RGBS, RGsB

Video output

SD-SDI:	SMPTE 259M-C 270Mbps
HD-SDI:	SMPTE 292M 1.485/1.4835Gbps
Resolutions:	525-line @ 29.97 625-line @25Hz 720p @ 23.98Hz, 24Hz, 25Hz, 29.97Hz 30Hz, 50Hz, 59.94Hz, 60Hz 1080p @ 23.98Hz, 24Hz, 25Hz, 29.97Hz 30Hz 1035i @ 29.97Hz 30Hz 1080i @ 25Hz, 29.97Hz 30Hz

12.3 Warranty

Limited warranty: 2 years parts and labor

12.4 Regulatory Compliance

Main unit conforms to FCC, CE, RoHS

12.5 Environmental

Operating Temperature 0° to +45° C (+32° to +113° F)
Operating Humidity 10% to 85%, Non-condensing
Storage Temperature -10° to +70° C (+14° to +158° F)
Storage Humidity 10% to 85%, Non-condensing

12.6 Power Requirement

External power supply specification: 12v DC regulated 0.5Amp PSU with a 2.5mm locking center-pin positive DC power connector. A non-locking 2.5mm DC power connector will also fit.
Actual current consumption varies between units.
Internal over-voltage & over-current protection.

12.7 Control Methods

The unit can be controlled locally via the front panel buttons and on-screen display.

12.8 Accessories Included

1T-C2-511

- DVI to VGA Adaptor

1T-C2-520

- None included

12.9 Mechanical

Size (H x W x D): 1.2”x7.9”x3.5” (30x200x89mm)
Weight (Net): 1.3 lbs (580g)

12.10 Optional Accessories

RM-220: single/dual rack-mount Kit

13 CONTACT INFORMATION

Should you have and questions or require assistance with this product in areas not covered by this manual, please contact TV One at the appropriate location shown below:

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